1A $f(x) = 1 - x^2$

$$\lim_{h\to 0} \frac{(1-(x+h)^2) - (1-x^2)}{x+h-x} = \frac{1-(x^2+2xh+h^2)-1+x^2}{h}$$

$$\lim_{h\to 0} = \frac{\cancel{1} - \cancel{x^2} - 2xh + h^2 - \cancel{1} + \cancel{x^2}}{h} \quad \frac{-2xh + h^2}{h} = -2x + h = \boxed{-2x}$$

at $x = 2$ $\quad -2(2) = -4$

1B $$\lim_{h\to 0} \frac{(2(x+h)^2 + 5(x+h)) - (2x^2 + 5x)}{x+h-x} = \frac{\cancel{2x^2} + 4xh + 2h^2 + \cancel{5x} + 5h - \cancel{2x^2} - \cancel{5x}}{h}$$

$$\frac{4xh + 2h^2 + 5h}{h} = 4x + 2h + 5 = \boxed{4x+5}$$

at $x = -1$ $\quad 4(-1) + 5 = 1$

1C $$\lim_{h\to 0} \frac{(5 - 2(x+h)^2) - (5 - 2x^2)}{x+h-x} = \frac{\cancel{5} - \cancel{2x^2} - 4xh - 2h^2 - \cancel{5} + \cancel{2x^2}}{h}$$

$$\lim_{h\to 0} \frac{-4xh - 2h^2}{h} = -4x - 2h = \boxed{-4x}$$

at $x = 3$ $\quad -4(3) = -12$

1D $$\lim_{h\to 0} \frac{3(x+h) + 5 - (3x+5)}{x+h-x} = \frac{\cancel{3x} + 3h + \cancel{5} - \cancel{3x} - \cancel{5}}{h}$$

$\frac{3h}{h} = \boxed{3}$ $\rightarrow$ the slope at any point is always 3

2A $$\lim_{h\to 0} \frac{\frac{4}{x+h} - \frac{4}{x}}{x+h-x} = \frac{\frac{4x - 4(x+h)}{x(x+h)}}{h} = \frac{\frac{-4h}{x(x+h)}}{h} = \frac{-4}{x(x+h)}$$

$$\lim_{h\to 0} \frac{-4}{x(x+h)} = \frac{-4}{x^2}$$